Cruise ID: 49WB20141025 (SY1410)

- Investigator:
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- Dataset Info:
  - Dataset ID: SY141023.csv
  - Funding Info: Global Environment Research Account for National Institutes by the Ministry of Environment, Japan
  - Submission Dates:
    - Initial Submission: 2016/01/29
    - Revised Submission:
- Cruise Info:
  - Survey/Experiment Type: Research Cruise
  - Survey/Experiment Name: SY1410
  - Cruise ID: 49WB20141023
  - Cruise info:
  - Section:
  - Geographical Coverage:
    - Geographical Region: Japan coast
  - Ports of Call: Yokohama
  - Bounds:
    - Westernmost Longitude: +137.9Degrees, Minutes, Seconds: E

        - Easternmost Longitude: +140.0Degrees, Minutes, Seconds: E
        - Northernmost Latitude: +34.5 Degrees, Minutes, Seconds: N
        - Southernmost Latitude: +29.9 Degrees, Minutes, Seconds: N
    - Temporal Coverage:
        - Start Date: 2014/10/25
        - End Date: 2014/11/2
    - Vessel:
        - Vessel Name: Soyo-maru
        - Vessel ID: 49WB
        - Country: Japan
        - Vessel Owner: Fisheries Research Agency
- Variables Info:
    - Variable:
        - Variable Name: XCO2_EQ
        - Description of Variable: umol/mol
        - Variable Name: XH2O_EQ
        - Description of Variable: mmol/mol
        - Variable Name: EQ_Press
        - Description of Variable: hPa
        - Variable Name: EQ_Temp
        - Description of Variable: deg C
        - Variable Name: SST
        - Description of Variable: deg C
        - Variable Name: SSS
        - Description of Variable: no unit
        - Variable Name: Air_Press

- Description of Variable: hPa
- Method Description:
  - Sampling and Equilibrator Design:
    - Depth of sea water intake: 5m
    - Location of sea water intake: Bottom of ship
    - Equilibrator type: menbrane equilibrator
      - Equilibrator volume:0.4 L
      - Water_Flow_Rate: 2.0 L/min
      - Headspace_Gas_Flow_Rate:100 ml/min
      - Vented: No
    - Drying method for CO2 in water:
      - electronic dehumidifier DH109C
    - Additional information:
  - System Design:
    - Measurement Method: automated version of Saito et al. [1995]
    - Manufacturer of Calibration Gas: Nissan-Tanaka Co. Ltd.
    - $C0_2$ Sensor:
      - Measurement Method: NDIR
      - Manufacturer: Li-COR
      - Model: LI-6262
      - Environmental Control:
        - xCO2 value submitted are corrected for xH2O by sensor's program
      - Frequency: every 1 min
      - Precision of CO2water: xCO2 1.6 umol/mol
      - Precision of CO2air:
      - Accuracy of CO2water: xCO2 1.6 umol/mol
      - Accuracy of CO2air:
      - CO2 Sensor Calibration:

- LI-6262 was calibrated at factory on Oct. 2013. CO2 concentration in standard gas cylinder was calibrated once at purchasing against NIES standard gas cylinder, which are traceable to WMO scale
- Manufacture of CO2 Calibration gases: Nissan Tanaka Co. LTD., 0ppm, 270ppm and 450 ppm
- Method References: Saito et al., A compact seawater pCO2 measurement system with membrane equilibrator and nondispersive infrared gas analyzer, Deep-Sea Res., 42, 2025-2033, 1995
- CO2 in Marine Air:
- Measurement:
- Location and Hight:
- Sea surface Temperature:
- Location: bottom of ship, just after the bottom seawater intake
- Manufacturer: JFE Advantec.
- Model: ACT-RS
- Accuracy: 0.02 deg C
- Precision: 0.02 deg C
- Calibration: last calibrated at factory on Oct. 2013
- Other comments:
- Sea surface Salinity:
- Location: branched just in front of water intake of equilibrator
- Manufacturer: Sea-Bird
- Model: SBE45
- Accuracy: 0.005

- Precision: 0.003
- Calibration: last calibrated on Sept. 2011 in manufacture factory
- Other comments:
- Equilibrator Temperature:
- Location: midst of equilibrator vessel
- Manufacturer: Rikagaku-kogyo Inc.
- Model: platinum resistance thermometer sensor, grade Pt100
- Accuracy: 0.15 deg C
- Precision: 0.15 deg C
- Calibration: last calibrated on 2014/1/6 at FRA lab., against JMA standard scale mercury thermometer
- Other comments:
- Equilibrator Pressure:
- Location: just after air outlet from equilibrator
- Manufacturer:
- Model: water gauge
- Accuracy: 2mmH2O
- Precision: 2mmH2O
- Calibration: calibrated at factory on Oct. 2013
- Other comments: Equilibrator pressure is measured as the pressure difference between the equilibrator air and atmosphere. In this cruise we have measured the pressure difference and that was constantly + 5 mmH2O against atmosphere all through the cruise, but we failed to measure the absolute value of atmosphere pressure due to the ship's sensor problem.
- Other sensors:
- Manufacturer:

- Model:
- Resolution:
- Uncertainty:
- Calibration:
- Other comments:
- Accuracy Info:
- Method References:

- Method References:
- Data Set References:
- Additional Information:
- Citation:
- Measurement of Calibration Report:
- Measurement Type: underway measurement underway data underway measurements
- Metadata Source: